

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF UTAH  
CENTRAL DIVISION

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SOUTHERN UTAH WILDERNESS  
ALLIANCE,

Plaintiff,

vs.

ROGER BANKERT, in his official capacity  
as Field Office Manager for the Price Field  
Office, Bureau of Land Management, et al.,

Defendants.

ORDER

AND

MEMORANDUM DECISION

Case No. 2:07-CV-292-TC

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This matter comes before the court on Plaintiff Southern Utah Wilderness Alliance's (SUWA) appeal of Defendant Bureau of Land Management's (BLM) decision approving a geophysical oil and gas exploration project in the San Rafael Desert. SUWA brings its appeal under the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321-4370f, and the Administrative Procedure Act (APA), 5 U.S.C. Chapter 7 (governing judicial review of agency decisions).

SUWA seeks reversal and remand of BLM's decision, contending that BLM did not satisfy NEPA's procedural requirements. Specifically, SUWA contends that (1) BLM blindly relied on an unverified statement from the project proponent about seismic data quality; (2) BLM engaged in a flawed analysis of alternatives; and (3) BLM did not properly consider impacts to biological soils. Because the court finds that BLM provided the requisite "brief" discussion of

alternatives, that BLM did provide independent evidence of the superiority of vibroseis data, and that BLM took a hard look at the potential impacts to biological soils, the court upholds BLM's decision and denies SUWA's request for reversal and remand.

## **BACKGROUND**

### **The Proposed Project and the Proposed Project Area**

On July 7, 2006, Dawson Geophysical Company ("Dawson") filed a Notice of Intent to Conduct Oil and Gas Exploration Operations ("Notice of Intent") with BLM on behalf of its client, Samson Resources Company ("Samson"). The proposed project, called the San Rafael Saddle 3-D Geophysical Project ("the proposed Project"), is intended to map subsurface geology using seismic waves to identify possible oil and gas deposits.

The San Rafael Desert, where the proposed Project would occur, is located east of the scenic San Rafael Swell and west of the Labyrinth Canyon section of the Green River and the Maze District of Canyonlands National Park. The proposed Project area (which measures approximately 61.1 square miles, or 39,120 acres) consists primarily of sandy soils and is dominated by grass-like vegetation. Much of the San Rafael Desert contains fragile biological soil crusts (these occur to an unknown extent throughout the proposed Project area), which prevent erosion and help fix nitrogen levels in the soil. Under BLM's land use plan for the area, the land is open to mineral exploration and development, livestock grazing, recreation, and unrestricted Off Highway Vehicle (OHV) use (with some discrete areas closed to OHV travel to protect sensitive soils).

The stated purpose of the proposed Project is to provide high quality geophysical information for Samson to evaluate geologic structures for untapped oil and natural gas

resources. Specifically, BLM explained that the proposed Project is:

necessary to provide high definition imaging of the subsurface geology in the proposed project area to aid in locating target zones for recovery of oil and natural gas reserves. Such knowledge of subsurface geology is likely to reduce the need for exploratory wells by increasing the likelihood that wells that are drilled will produce commercial quantities of oil and natural gas. This would result in less surface disturbance because fewer unproductive wells (“dry holes”) would be drilled, as well as in reduced development costs.

(Apr. 2007 Environmental Assessment to Analyze Dawson Geophysical Company’s Proposed San Rafael Saddle 3-D Geophysical Exploration Project (EA) at p. 1-3, AR0048.)

Dawson proposes to use a three-dimensional (3-D) seismograph data collection system, which employs “vibroseis” technology. Vibroseis trucks (euphemistically called “buggies”) weigh 64,000 pounds, measure 34 feet in length by 8.5 feet in width, and are equipped with 3-foot-wide “balloon” tires. They will create vibrations using 4-by-8 foot steel plates lowered to the ground at predetermined points in the 39,000 acre proposed Project area, thereby generating subsurface waves (which will be detected by geophones) to map geologic formations.

According to BLM, approximately 95% of the surface soils of the proposed Project area would not be affected by the proposed vibroseis exploration, and the remaining 5% of the surface soils would be subject to potential temporary and negligible disturbance. The 5% surface disturbance is not all in one location; rather, it is spread throughout the proposed Project area over narrow corridors of land along the routes that will be traversed by the vibroseis buggies. That is, approximately 2,000 acres will be affected by the vibroseis buggy tracks, and, of that area, about 34 acres will be affected by the steel plates during the data-collection process.

### **BLM's NEPA Process**

Before BLM could grant or deny permission to conduct the proposed exploration, it needed to follow NEPA procedures, including conducting an environmental assessment to analyze the potential environmental impacts of the proposed Project and a reasonable range of alternatives. As allowed by BLM's rules, Dawson hired a private third-party environmental consulting company, TRC Mariah Associates, Inc. ("TRC Mariah"), to take the lead in preparing the environmental assessment.

In November 2006, BLM released the draft EA for a 30-day public review and comment period. SUWA submitted timely comments which expressed concern with potential impacts of the proposed action and suggested changes to the analysis, including a request that BLM fully analyze two alternatives to the proposed action. Those two alternatives are (1) to use buggy shotholes, or (2) to use a combination of vibroseis, buggy shotholes, and heliportable shotholes, as described in the expert comments (incorporated into SUWA's comments) of Mr. Ken Kreckel, an individual with expertise in geophysics.

BLM modified the draft EA in part in response to SUWA's comments, and issued its final decision on April 9, 2007. (See Decision Record (DR), AR0001-AR0005.) At the same time, BLM issued its final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI), both of which were generated based on NEPA's procedural requirements. Although the EA was originally drafted by TRC Mariah, BLM reviewed the draft and participated in the process before issuing the draft and final EA's as its own documents.

The EA fully discussed the Project as proposed by Dawson/Samson and the "no-action alternative." But all other proposed alternatives (including those suggested by SUWA) were

rejected with little discussion in the document. BLM rejected SUWA's proposed alternatives primarily because, although they were technically feasible, they were similar to the proposed Project and the proposed Project would cost less and produce superior seismic data.

Ultimately, BLM found that the proposed Project would not have a significant impact on the environment. Accordingly, it did not have to issue an Environmental Impact Statement. Instead, BLM issued its decision approving the proposed Project as modified in the EA. For example, BLM's approval of the proposed Project requires Dawson to implement mitigation measures designed to protect various resources, including biological soils.

### **SUWA's challenges**

SUWA appealed BLM's decision. The proposed Project has not yet begun, but it was tentatively scheduled to begin October 1, 2007, depending on the outcome of SUWA's appeal. In its appeal, now before the court, SUWA raises three different challenges under NEPA.

First, SUWA contends that BLM failed to independently evaluate TRC Mariah's rejection of alternatives, and Dawson/Samson's "self-serving" statement that the proposed Project would produce superior data as compared to the proposed alternatives. SUWA asserts that BLM blindly accepted the applicant's assessment of the alternatives, pointing to BLM's blanket statement of acceptance in the EA and lack of record evidence showing that BLM independently validated the information that prompted rejection of the alternatives. This, says SUWA, is a violation of BLM's duty under 40 C.F.R. § 1506.5 to independently evaluate applicant-produced information, and is grounds for reversal and remand.

Second, SUWA maintains that BLM failed to fully analyze a reasonable range of technically feasible alternatives. SUWA does not suggest that BLM's decision to fully analyze

only the proposed action and the no-action alternative was a *per se* NEPA violation. Instead, SUWA argues that BLM should have more fully analyzed SUWA's suggested alternatives of completing the exploration using shothole technology instead of vibroseis, or a combination of shothole and vibroseis technologies. According to SUWA, BLM arbitrarily and capriciously rejected those alternatives.

SUWA's final contention is that BLM failed to take a "hard look" at how the proposed Project would affect biological soil crusts.<sup>1</sup> According to SUWA, "[t]hese crusts are vital to the environmental integrity of arid lands in Utah and throughout the Colorado Plateau, preventing erosion and helping fix nitrogen levels in the soil. They are extremely fragile; 'vehicular traffic can rapidly destroy biological soil crusts,' with recovery taking '50-100 years.'" (Pl.'s Opening Br. at 21 (citations to administrative record omitted).) SUWA says BLM did not map or survey the extent of biological soil crusts in the area and did not explain why it could not do so. Further, according to SUWA, because BLM relied on data from earlier seismic exploration projects conducted in "geographically distinct areas," BLM erroneously compared apples to oranges to conclude that there would be no significant impact to biological soils.

## ANALYSIS

### A. Standard of Review

SUWA seeks judicial review of BLM's decision pursuant to the Administrative Procedure Act (APA), 5 U.S.C. §§ 701 et seq. Under the APA, the court must determine

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<sup>1</sup>SUWA also originally challenged BLM's failure to consider effects on sand dunes in the area. SUWA has since conceded that it waived that challenge because it did not raise the issue in its comments on the draft EA, so the issue of sand dunes is no longer before the court.

whether BLM's decision was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). An agency decision is "arbitrary and capricious" if

the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).

When applying the "arbitrary and capricious" standard, the court must determine whether BLM's "decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971).<sup>2</sup> Although this inquiry must be thorough, the standard of review is highly deferential; the agency's decision is entitled to a presumption of regularity, and the court cannot substitute its judgment for that of the agency. Id. at 415-16. Judicial deference to the agency's "informed discretion" is especially appropriate when the analysis "requires a high level of technical expertise." Marsh v. Oregon Natural Res. Council, Inc., 490 U.S. 360, 377 (1989) (quoting Kleppe v. Sierra Club, 427 U.S. 390, 412 (1976)).

## **B. NEPA Framework**

NEPA is a procedural statute promulgated to ensure that an agency makes a fully informed and well-considered decision. Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc., 435 U.S. 519, 558 (1978). NEPA requires that an agency take a "hard look"

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<sup>2</sup>Overruled on unrelated grounds by Califano v. Sanders, 430 U.S. 99 (1977).

at the environmental consequences of a proposed action. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989). In essence, the statute “prohibits an uninformed – rather than an unwise – agency action.” Custer County Action Ass’n v. Garvey, 256 F.3d 1024, 1034 (10th Cir. 2001) (quoting Robertson, 490 U.S. at 351). “NEPA does not mandate any particular substantive outcome. As [the Tenth Circuit] observed, ‘[NEPA] does not require agencies to elevate environmental concerns over other appropriate considerations . . . [I]t requires only that the agency take a ‘hard look’ at the environmental consequences before taking a major action.’” Citizens’ Comm. to Save Our Canyons v. U.S. Forest Serv., 297 F.3d 1012, 1022 (10th Cir. 2002) (internal citations omitted).

Nevertheless, § 102(2)(c) of NEPA requires BLM to determine whether a proposed federal action will “significantly affect[] the quality of the human environment.” 42 U.S.C. § 4332(2)(C). If it will, BLM must prepare an environmental impact statement (EIS). 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1501.4. To determine whether an EIS is required, federal agencies may first prepare an environmental assessment, as BLM did here. See 40 C.F.R. § 1501.4. An EA must “include brief discussions of the need for the proposal, of alternatives . . . , of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.” 40 C.F.R. § 1508.9(b).

If, through preparation of the EA, the agency finds no significant impact from the proposed project, it issues a Finding of No Significant Impact (FONSI) justifying its decision not to prepare an EIS. 40 C.F.R. § 1508.13. Here, BLM found no significant impacts and so it issued its FONSI. A FONSI determination is analyzed under a two-prong test: (1) “whether the [agency’s] decision was based on a consideration of the relevant factors,” and (2) “whether



there has been a clear error of judgment.” Committee to Preserve Boomer Lake Park v. Dep’t of Transp., 4 F.3d 1543, 1549, 1555 (10th Cir. 1993) (quoting Overton Park, 401 U.S. at 416).

**C. Issues Raised on Appeal**

**1. BLM Independently Evaluated the Project Proponent’s Information.**

Here, an independent third-party (TRC Mariah) hired by the Project proponent (Samson/Dawson) took the reins to prepare the EA. This is allowed, but when that occurs, the agency must “independently evaluate” the information provided by the applicant. 40 C.F.R. § 1506.5(a)-(b).

SUWA claims that BLM relied exclusively on an unverified statement from geophysicist Stuart Wright (an employee of the applicant) that data from use of vibroseis technology is superior to other seismic exploration methods proposed by SUWA. But BLM points to a portion of the record, generated by BLM, that says vibroseis technology is the most precise method for gathering data.

In a January 4, 2006 document, BLM analyzed the results of a BLM “data call” for information from NEPA records for 244 geophysical exploration projects (like the one proposed by Dawson/Samson) that were conducted between October 1, 2000, and September 30, 2005. In that “data call” document, BLM states that the vibroseis process “is the most precise process because it uses controlled vibrations that are spread over a period of time, as opposed to the explosion vibration that is a single burst of energy.” (Jan. 4, 2006 Analysis Report by BLM at 6, AR0519.) BLM also notes that it has significant experience and internal expertise regarding seismic exploration, as the “data call” document evidences.

Further, in the EA BLM discusses the rationale underlying Mr. Wright’s statement that

vibroseis data is superior:

Vibroseis is a frequency, phase and amplitude controlled source that produces zero-phase data after correlation with the pilot sweep. Zero-phase data is recognized by the seismic industry as the optimum reflection pulse for detailed stratigraphic interpretation of the earth's surface. Dynamite produces a minimum-phase pulse. There is also a difference in the length of time over which the compressional waves are excited in the earth. Vibroseis energy is imparted gradually - typically over a period of 40 to 120 seconds. Dynamite, on the other hand, is essentially instantaneous. This abrupt release of energy can produce brittle failure in indurate rocks, or grain-shifting in unconsolidated sands. Both situations produce sub-optimal compressional-wave seismic reflections. Finally, dynamite data is much more susceptible to random environmental noise such as wind, animals and traffic. With any single impulsive source, data acquisition can only take place under the quietest of conditions. For vibroseis data, the ratio of signal to random noise can be improved by increasing the number of sweeps, the length of the sweeps, the number of vibrator trucks, the fundamental ground force, or the sweep bandwidth. Varying these parameters provides flexibility to changing field conditions that are common in most settings.

(EA at 2-14 to 2-15, AR0067-AR0068.) (See also EA List of Preparers, Tbl. 5-2, at p. 5-10, AR0083-42 (listing members of BLM's interdisciplinary team, including Neil Simmons, Geologist/GIS, whose area of responsibility was GIS (geographic information system) data).)

Given the foregoing, the court finds that BLM fulfilled its duty under 40 C.F.R.

§ 1506.5(a)-(b).

## **2. BLM Adequately Considered Technically Feasible Alternatives.**

NEPA requires federal agencies to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E). See also Davis v. Mineta, 302 F.3d 1104, 1120 (10th Cir. 2002) (“A properly-drafted EA must include a discussion of appropriate alternatives to the proposed project.”). BLM's NEPA regulations require BLM to provide a “brief discussion” of alternatives in an EA. See 40 C.F.R. § 1508.9(b). When

reviewing the adequacy of an EA's evaluation of alternatives, courts must apply a "rule of reason" standard (essentially, an "abuse of discretion" standard). Citizens for Alternatives to Radioactive Dumping v. U.S. Dep't of Energy, 485 F.3d 1091, 1098 (10th Cir. 2007); All Indian Pueblo Council v. United States, 975 F.2d 1437, 1445 (10th Cir. 1992).

SUWA claims that BLM violated NEPA by only fully analyzing the proposed action and the no-action alternative. Clearly, BLM considered other alternatives (albeit briefly), so the range of alternatives is not an issue. Instead, SUWA asserts that BLM did not sufficiently analyze the alternatives (i.e., the discussion in the EA was unsupported and too brief to be meaningful).

BLM contends that, because the proposed Project (if mitigated as outlined in the EA), would not have a significant impact on the environment,<sup>3</sup> there was little need to extensively analyze alternatives that were similar in nature, would produce less accurate seismic data,<sup>4</sup> and

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<sup>3</sup>At the time the EA was being prepared, BLM was considering creating a categorical exclusion (CX) for certain types of geophysical exploration projects, including the type proposed here. For categorical exclusions, no NEPA analysis is needed (absent exceptional circumstances) for projects such as this because BLM has found that such projects do not have a significant impact on the environment. See 40 C.F.R. §§ 1508.4, 1507.3. BLM's proposed CX was the force behind preparation of the 2006 data call document. On August 14, 2007 (after Dawson submitted its Notice of Intent and BLM issued the Project EA), BLM adopted the categorical exclusion for geophysical exploration projects when no temporary or new road construction is proposed. See 72 Fed. Reg. 45504 (Aug. 14, 2007). The new CX does not factor into the court's analysis, although the data call document demonstrates that BLM has significant experience and expertise in this area.

<sup>4</sup>Mr. Kreckel, SUWA's expert, opined that data collected through the proposed alternative exploration technologies would provide "the same or higher quality data than the proposed action" would provide. (AR0209.) He cites no support for that proposition. The other statement he makes ("Data quality was good" (id.) for the combined technologies alternative), although supported by citation to an article, does not trump BLM's conclusion that vibroseis technology is the most precise of existing seismic exploration technologies. See, e.g., Marsh, 490 U.S. at 378 ("When specialists express conflicting views, an agency must have discretion to

would cost more.<sup>5</sup> The court agrees.

The two alternatives proposed by SUWA were use of the shot hole method (either by buggy or helicopter) or a combination of methods, such as using vibroseis on roads, buggy shot hole on cross-country portions, and heli-portable shot hole on OHV restricted areas. BLM only briefly discussed these alternatives.

First, BLM stated that “[t]he quality of data recorded from the reflection of energy signals generated by surface shots is inferior to the quality of data using vibroseis buggies or shotholes.” (EA at p. 2-14, AR0067.) Then it rejected the use of helicopters to drill shot holes because “much of the project area is suitable for vibroseis buggies, and because the cost of heliportable drilling is much higher. Also, based on recent studies (BLM 2006), the generally low impacts of seismic exploration [regardless of method used] do not justify such additional costs.” (*Id.*) BLM then explained why vibroseis data is of higher quality. Later, BLM stated that “[b]uggy drills could be used to drill shotholes to provide the source points for the seismic survey. Surface disturbance would be less using this method than with vibroseis; however, shotholes would not provide the quality of data to satisfy the purpose and need of the project . . . .” (*Id.* at p. 2-15, AR0068.) As for the proposed combination of methods, BLM cited the same reasons for

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rely on the reasonable opinions of its own qualified experts . . . .”). See also Citizens’ Comm. to Save Our Canyons v. U.S. Forest Serv., 297 F.3d 1012, 1030 (10th Cir. 2002) (“Where the action subject to NEPA review is triggered by a proposal or application from a private party, it is appropriate for the agency to give substantial weight to the goals and objectives of that private actor.”).

<sup>5</sup>BLM also notes that “superior data increases the likelihood that an exploratory well will encounter commercial quantities of hydrocarbons, and thus potentially decreases the number of unsuccessful wells that may need to be drilled and the surface disturbance associated with the drilling of unproductive wells.” (Fed. Defs.’ Response Br. at 10.)

rejecting that proposed alternative. (Id. at p. 2-16, AR0069.)

The court finds that BLM's analysis of alternatives was reasonable. First, as noted above, the regulations require only a "brief discussion" of proposed alternatives. Second, there was little difference between the alternatives (although surface disturbance would be less, nothing requires BLM to focus on the more environmentally friendly alternative). See, e.g., Headwaters, Inc. v. BLM, 914 F.2d 1174, 1181 (9th Cir. 1990) ("NEPA does not require a separate analysis of alternatives which are not significantly distinguishable from alternatives actually considered, or which have substantially similar consequences."). Third, BLM determined that the proposed Project, with mitigation measures imposed by BLM, would not have a significant impact on the environment. See, e.g., Park County Res. Council, Inc. v. U.S. Dep't of Agric., 817 F.2d 609, 621-22 (10th Cir. 1987)<sup>6</sup> (noting that agency and courts may take into account mitigation measures imposed by agency to justify issuance of FONSI). Fourth, the standard the court must impose is the "rule of reason" standard, characterized by the Tenth Circuit as an "abuse of discretion" standard. Given these factors, the court concludes that BLM's analysis of alternatives in the EA did not violate the rule of reason and was not arbitrary or capricious. See, e.g., Utah Envtl. Congress v. Bosworth, 439 F.3d 1184, 1195 (10th Cir. 2006) (holding that agency did not act arbitrarily when it considered only proposed action and no action alternative in EA); Biodiversity Conservation Alliance v. U.S. BLM, 404 F. Supp. 2d 212, 218-19 (D.D.C. 2005) (upholding EA discussing oil and gas exploration project using vibroseis method, and finding that BLM's consideration and rejection of shot-hole alternatives that were not technically,

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<sup>6</sup>Overruled on other grounds by Village of Los Ranchos De Albuquerque v. Marsh, 956 F.2d 970 (10th Cir. 1992).

physically, and/or economically feasible was not arbitrary and capricious).

**3. BLM Took a “Hard Look” at the Proposed Project’s Potential Impact to Biological Soils.**

a. Defendants’ Waiver Argument

As a threshold argument, BLM and Defendant-Intervenor Samson Resource Company contend that SUWA waived its “hard look” argument regarding biological soils. According to the Defendants, SUWA did not raise the issue in its comments on the draft EA so it may not raise the issue now in court. If the challenging party did not raise the issue in the administrative forum, that party forfeits its ability to raise the objection on appeal. Silverton Snowmobile Club v. U.S. Forest Serv., 433 F.3d 772, 783 (10th Cir. 2006).

Based on a review of SUWA’s comments, the court finds that SUWA did not waive the issue regarding impact to biological soils. To preserve the argument for appeal, SUWA needed to notify BLM about its objections in a manner that allowed BLM “to give the issue meaningful consideration.” Department of Transp. v. Pub. Citizen, 541 U.S. 752, 764 (2004). SUWA did so.

In its comments, SUWA stated that BLM failed to take a hard look at the potential impacts on “soils and vegetation.” (AR0194.)

Soils and vegetation are likely to be more severely impacted than what the EA presently estimates. . . . The EA erroneously concludes that impacts to soil and vegetation will be short and insignificant. . . . BLM appears to understate recovery rates because it relies upon an environmental assessment from a seismic project in Uintah County to judge impacts to soils and vegetation. . . . It is improper to use these areas to determine vegetation and soil recovery in the San Rafael Desert. The EA itself states that recovery of soils and vegetation is dependent on precipitation levels. See EA at 4-7. It is difficult to understand how BLM can claim that soil impacts will not be significant when the EA states that recovery of soil surface integrity and soil flora can take from 50 to 100 years—in the best

case scenario, having crushed material left in place. EA at 4-7. This large amount of time required for recovery appears indicative of a significant impact.

(Dec. 14, 2006 Comments by SUWA at 10-11, AR0201-AR0202 (emphasis added).) “Soil flora” is a reference to biological soils. (See EA at p. 4-8, AR0083-20 (quoting Jayne Belnap study on biological soils, in which biological soils are referred to as “soil flora”).)

In the above-quoted comment, SUWA clearly objected to BLM’s use of other seismic exploration impact studies that, according to SUWA, were not proper comparables for evaluating the impacts to biological soils. SUWA also attached to its comments a scientific article by Dr. Jayne Belnap (in draft form) discussing the impacts of geophysical exploration on biological soils and vegetation.

Although SUWA’s comments do not express the concern articulated in its appellate brief that BLM did not map out the location of biological soils, its comments sufficiently raised the issue of whether BLM took a hard look at the proposed Project’s potential impacts on biological soils. Accordingly, the court will consider the merits of SUWA’s argument.

b. Merits of SUWA’s Argument

SUWA contends that BLM did not take a “hard look” at the proposed Project’s potential impact on biological soils. One of its complaints is that BLM did not map out the locations of biological soils within the proposed Project area. Because SUWA did not raise this particular complaint in its comments, the court will not address it. But the court will review BLM’s overall information concerning biological soils to determine whether BLM took the requisite hard look at the issue.

In the EA, BLM cites to numerous sources relating to the recovery rates of biological soil

crusts. (See, e.g., EA Pt. 6.1 (listing literature cited).) “Biological soil crust” (also known as “cryptobiotic soil”) is “a complex community of bacteria, algae, lichens, mosses, and fungi that often populate the soil surface, especially on arid lands.” (EA at pp. 6-4 to 6-3, AR0083-46 to AR0083-47.) The EA does not define “critical soils” in its glossary, but it does describe them in § 3.3.4, and the description shows that the two types of soil have very different characteristics. Although the EA maps “critical soils” (see EA Fig. 3.6, AR0083-6), BLM does not identify locations of “biological soils” in the proposed Project area. BLM just states that “[n]umerous areas of biological soil crusts occur in the project area.” (*Id.* at p. 3-9, AR0083-5.)

Although it is not absolutely clear from the EA, it appears that BLM considered “biological soils” to be different than “critical soils.” Indeed, SUWA convincingly asserts that the two types of “soil” are mutually exclusive, and BLM does not argue otherwise. (See, e.g., *id.* at pp. 3-7 to 3-9, AR0083-3 to AR0083-5 (describing critical soils and noting that such soils, which are highly susceptible to water and wind erosion, are “made more susceptible when the vegetation or biological soil crust is removed”) (emphasis added).) For that reason, the court treats them as different resources.

BLM notes that an evaluation of potential impacts on biological soils is very difficult to do because so many factors (including the weather at the time of the disturbance) affect the analysis. “The impact of a given surface disturbance [to biological soil crusts] depends upon [the disturbance’s] severity, frequency, timing, and type, as well as climatic conditions during and after the disturbance (BLM 2001a).” (EA at p. 4-7, AR0083-19.) The EA does not discuss the biological soils in the proposed Project area itself. Instead, BLM notes that a relatively small percentage of the proposed Project area will be disturbed and BLM assumes that biological soils



appear throughout the area that will be disturbed. BLM also emphasizes mitigation measures that focus specifically on reducing any impact the proposed Project might have on biological soils. (See, e.g., id. at pp. 2-10 to 2-11, AR0063-AR0064 (listing soil resource protection requirements, including raking disturbed biological soil crusts back into the tracks from the sides).) Given BLM's experience with the damage to and recovery of biological soils in other areas subjected to vibroseis exploration projects, BLM deduces that biological soils will not be significantly impacted in the proposed Project area.

SUWA complains about BLM's reliance on results of other seismic exploration projects. SUWA asserts that when BLM refers to the Western Geco Horse Point 3D seismic exploration project (BLM 2003l) and the Veritas DGC Land Inc. 2D seismic exploration project (BLM 2001b, BLM 2003a-2003k), BLM is comparing apples to oranges because the geographic locations are so different (they get more annual precipitation than the proposed Project area). According to SUWA, comparing recovery rates of biological soils in wetter parts of the state to soils in a drier part of the state results in an uninformed decision. But BLM makes clear that recovery rates vary depending on many factors, not just annual precipitation.

Furthermore, BLM had information from sources other than the Horse Point and Veritas projects regarding the recovery rates of biological soils. SUWA does not suggest that the information cited by BLM is incorrect. That information included studies about biological soil recovery rates.

The information presented in those studies was not uniform. According to BLM, "studies estimating recovery times for biological soil crusts vary considerably." (EA at p. 4-8, AR0083-20.) BLM cited to specific studies as examples of this variation. One study predicted recovery

within 45-110 years (actual recovery was between 14 and 34 years). At another site, recovery was predicted to occur more than 400 years later (an early estimate) and, upon later review, predicted to recover in 42 years. And another study estimated that a site would recover after 85 years, but then decreased the estimate to 50 years after re-examination of the soil 14 years later. The Dr. Jayne Belnap study (upon which SUWA relies heavily) was only one of many that BLM cited. Her estimate ranged from 50-100 years. After showing the variation in estimates, BLM reported that “[t]hese and other estimates of recovery time indicate that such estimates are difficult to make and depend on numerous factors that are difficult to assess.” (*Id.*)

Under the hard look requirement, the agency must include definitive information about effect and risk, or provide an explanation why that may not be given, so that a reviewing court can evaluate agency action. See Silverton Snowmobile Club, 433 F.3d at 781-82 (holding that Forest Service’s assumption that lynx species was present in project area containing potential lynx habitat did not violate “hard look” requirement). Here, BLM had a fair amount of information about biological soils but did not have definitive information because even the experts seemed to disagree about the recovery rates. BLM took that information, along with information it had gathered from its experience with recovery of biological soils after disturbance from other seismic exploration projects, added the mitigation measures (which it imposed based on experience from other projects), considered the relatively small area that potentially could be disturbed,<sup>7</sup> and made its decision.

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<sup>7</sup>According to BLM, the proposed Project would disturb approximately 2,000 acres (5.1% of the proposed Project area) and that approximately 200 acres of “critical soils” would be disturbed (0.5% of the proposed Project area). (EA at p. 406, AR0083-18.)

BLM was sufficiently informed when it made its decision. The information in the record, and BLM's discussion, is sufficient to satisfy the hard look requirement of NEPA.

**ORDER**

Given the deference due BLM under the case law, and given the reasons set forth above, the court finds that there was no clear error of judgment on BLM's part. Accordingly, BLM's decision was not arbitrary and capricious, and SUWA's request for reversal and remand is DENIED.

DATED this 3rd day of October, 2007.

BY THE COURT:

A handwritten signature in black ink that reads "Tena Campbell". The signature is written in a cursive, flowing style.

TENA CAMPBELL  
Chief Judge